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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/623,013	07/17/2003	John Apostolopoulos	200300058-1	4609

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FORT COLLINS, CO 80527-2400

EXAMINER
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LEE, CHI HO A

ART UNIT	PAPER NUMBER
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2616

MAIL DATE	DELIVERY MODE
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09/05/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/623,013

Applicant(s)

APOSTOLOPOULOS ET AL.

Examiner

Andrew Lee

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 June 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-42 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rhee U.S. Patent Number 6,289,054 in view of Clark U.S. Patent Number 7,058,048.

Re Claims 1, 16, Rhee teaches in fig. 4, a encoder 406 encoding packet sequence (a first order) over lossy network to the Receiver 402, whereby 402 includes Statistics Gathering/Reporter 412 monitors communication parameters and reports it to the Adapter 414 whereby 414 compute the number of repair packets to be transmitted during the PTDD period (second order), wherein the repair packets reduces the distortion of the video output at 402 (See col. 5, lines 36 +; also see col. 15, lines 30-39). Rhee fails to explicitly teach a predicted distortion from received packet sequence. However, Clark teaches QoS monitoring for multimedia communication system whereby a neural network based algorithm is used to learn from the observed network impairments and to predict the continuous behavior of the packet connection. One skilled in the art would have been motivated by Clark to modify 412 to include the learning and prediction of the neural network to maintain QoS of the multimedia data. Therefore, it would have been obvious to one ordinary skilled to combine the references.

Art Unit: 2616

Re Claims 2, refer to Claim 1, wherein the communication parameter includes packet losses resulting from the learn pattern behavior.

Re Claim 3, refer to Claim 1, wherein the video packets are stored prior to transmitting packet sequence.

Re Claims 4, 5, refer to Claim 1, wherein the adapter is an interleaver for interleaving packets.

Re Claim 6 refer to claim 5, wherein the adapter operated by a computer readable code.

Re Claim 7, refer to Claim 1, wherein the adapter controls plurality of network parameters such as rate control schemes, frame rate, quantization adjustments (See col. 15, lines 30-39).

Re Claims 8, refer to Claim 1, wherein the neural network collectively learns the behaviors of the network based the network parameters and selectively controls the rate control schemes.

Re Claim 9, refer to Claim 1, wherein the learn behavior includes the estimated loss characteristics.

Re Claims 10, refer to Claim 1.

Re Claims 11, refer to Claim 1, wherein data is collected and periodically report to adapter.

Re Claims 12, 13, 14, 39, See Col. 5, lines 50-65, network parameters.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 16-20, 22-26, 29-34, 36-39, 41, 42 are rejected under 35 U.S.C. 102(e) as being anticipated by Rhee U.S. Patent Number 6,289,054.

Re Claims 16, 22, 29, 36, Rhee teaches in fig. 4, a encoder 406 encoding packet sequence (a first order) over lossy network to the Receiver 402, whereby 402 includes Statistics Gathering/Reporter 412 monitors communication parameters (channel characteristics...estimate) and reports it to the Adapter 414 whereby 414 compute the number of repair packets to be transmitted during the PTDD period (second order), wherein the repair packets reduces the distortion of the video output at 402 (See col. 5, lines 36 +; see col. 15, lines 30-39).

Re Claims 17, 30, refer to Claim 1, wherein the video packets are stored prior to transmitting packet sequence.

Re Claims 18, 25, 32 refer to Claim 1, wherein the adapter is an interleaver for interleaving packets.

Re Claims 18, 19, 33, refer to claim 5, wherein the adapter operated by a computer readable code.

Re Claims 20, 34, plurality adapters controls plurality network parameters (See Col. 5, lines 50-65).

Re Claims 23, 37, refer to Claim 22, send real time video.

Re Claims 24, 38, refer to Claim 22, 412 accumulate channel characteristics.

Re Claims 25, 26, 31, 41, 42, refer to Claim 22, wherein the 414 selects repair packets for plurality of frames and plurality of channels.

5. Claims 21, 27, 35, 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rhee U.S. Patent Number 6,289,054 in view of Clark U.S. Patent Number 7,058,048.

Re Claims 21, 27, 28, 35, 40, Rhee fails to explicitly teach a predicted distortion from received packet sequence. However, Clark teaches QoS monitoring for multimedia communication system whereby a neural network based algorithm is used to learn from the observed network impairments and to predict the continuous behavior of the packet connection. One skilled in the art would have been motivated by Clark to modify 412 to include the learning and prediction of the neural network to maintain QoS of the multimedia data. Therefore, it would have been obvious to one ordinary skilled to combine the references.

### ***Response to Arguments***

6. Applicant's arguments filed 6/20/07 have been fully considered but they are not persuasive.

Re Claim 16, Applicant argues that "receiving media packets in a first order and transmitting said media packets in a second order" is not found in Rhee.

Art Unit: 2616

Examiner disagrees.

Fig. 4 teaches an Adaptor 414 receives a first order of media packet via video in; the Report 412 at the receiver communicates loss packet information to 414; during loss recovery scheme using FEC, then adapter 414 compute the number of FEC repair packets to be transmitted with the received media packet (a second order).

Re Claims 1-16, 21, 27, 35, and 40, Applicant argues that "receiving media packets in a first order and transmitting said media packets in a second order" is not found in Rhee.

See reasoning above.

### ***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Art Unit: 2616

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Lee whose telephone number is 571-272-3130. The examiner can normally be reached on Monday to Friday from 8:30AM to 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Firman Backer can be reached on 571-272-6703. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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ANDREW C. LEE  
PRIMARY PATENT EXAMINER